

### **REMARKS**

This amendment is submitted with a Request for Continued Examination and appropriate fee in reply to the final Office Action dated March 31, 2006, and pursuant to the Notice of Appeal filed on October 2, 2006. Claims 13-16 and 18-32 currently stand rejected. Applicants have amended independent claims 13, 27 and 29 to more particularly distinguish the claimed invention from the cited references. Newly added claims 33-40 have been added to further define patentable aspects of the invention. Claims 15, 22-25 and 31 have been amended to correct spelling errors or ensure proper antecedent basis with respect to their corresponding independent claims. No new matter has been added by the amendment.

In light of the amendment and the remarks presented below, Applicants respectfully request reconsideration and allowance of all now-pending claims of the present application.

#### **Claim Rejections Under 35 U.S.C. §102(b)**

Claims 13, 14, 18, 21 and 25-29 stand rejected under 35 U.S.C. §102(b) as being anticipated by Russell et al. (paper on "Measure of local speaking-rate for automatic speech recognition" published May 13, 1999, hereinafter "Russell").

Independent claim 29 has been amended to recite, *inter alia*, biasing the transition probabilities in dependence of the number of phonetic segments in a word. The amendment clarifies that the claimed invention is directed to biasing transition probabilities based on word level analysis of a number of phonetic segments, whereas previously the claimed invention recited biasing the transition probabilities in dependence of the number of phonetic segments in an utterance.

The final Office Action asserted that Russell inherently disclosed biasing the transition probabilities in dependence of the number of phonetic segments in an utterance at col. 1 of page 1 of Russell by virtue of the measurement of the rate of speaking by measuring phones-per-second. However, as admitted in the final Office Action, Russell measures the number of phones-per-second in a sentence. In other words, Russell discloses measuring the number of phones-per-second at a sentence level. Furthermore, as defined by Russell, the number of phones-per-second is "defined to be the number of non-silence phones in a sentence *s* divided by

the non-silence duration of  $s^*$ . Accordingly, Russell only takes into account the non-silence phones over the length of a sentence and is unconcerned with and unable to distinguish between individual words. Instead, Russell treats the sentence as one continuous sound in which individual words of the sentence are merged together.

To the contrary, the claimed invention is directed to the problem of effective word recognition, as described generally in the introductory portion of the description. Although the final Office Action stated that utterance and sentence are synonymous, Applicants respectfully submit that, in light of the amended independent claims, whether utterance and sentence are synonymous is now immaterial since the claimed invention now recites biasing the transition probabilities in dependence of the number of phonetic segments in the word. Since the method of Russell is unable to distinguish between individual words, Russell cannot be considered to teach or suggest estimating the number of phonetic segments in a particular word and using such estimate to bias the transition probabilities as claimed in independent claim 29. Instead, Russell discloses estimating the rate of phones over an entire sentence and therefore teaches away from independent claim 29.

Additionally, in the third and fourth lines of the paragraph following Fig. 3, Russell discloses determining a rate of speech based on estimating the duration of each phone and using the estimated duration of each phone to "adapt the self-transition probabilities throughout an utterance". This aspect of Russell, therefore, also teaches away from the recited feature above in which transition probabilities are biased in dependence of the number of phonetic segments in a word. Instead, the transition probabilities of Russell are adapted throughout an utterance. Thus, the number of phonetic segments in the utterance is not taken into account when biasing the transition probabilities, in contrast to the claimed invention, in which the number of phonetic segments in a word is determined and then used in the word to retrospectively set the transition probabilities for the word.

In light of the arguments above, Applicants submit that Russell fails to teach or suggest biasing the transition probabilities in dependence of the number of phonetic segments in the word as recited in independent claim 29. Independent claims 13 and 27 include substantially similar subject matter to that of independent claim 29 with respect to biasing the transition

probabilities and thus independent claims 13 and 27 are patentable for at least the reasons given above for independent claim 29. Claims 14, 18, 21, 25, 26 and 28 depend either directly or indirectly from corresponding ones of independent claims 13, 27 and 29, and thus include all the recitations of their corresponding independent claims. Therefore, dependent claims 14, 18, 21, 25, 26 and 28 are patentable for at least those reasons given above for independent claims 13, 27 and 29.

Accordingly, for all the reasons stated above, Applicants respectfully submit that the rejections of claims 13, 14, 18, 21 and 25-29 are overcome.

**Claim Rejections Under 35 USC §103**

Claims 15, 16, 19, 20, 22-24 and 30-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Russell in view of various combinations of James et al. ("A Fast Lattice-Based Approach to Vocabulary Independent Wordspotting", hereinafter "James"), Bergstrom, Gupta et al. (U.S. Patent No. 5,390,278, hereinafter "Gupta '278"), Gupta et al. (U.S. Patent No. 6,138,095, hereinafter "Gupta '095"), Ueyama et al. (U.S. Patent Application Publication No. 2001/0056346, hereinafter "Ueyama") and Schwartz et al. (U.S. Patent No. 5,621,859, hereinafter "Schwartz").

As stated above, Russell fails to teach or suggest biasing the transition probabilities in dependence on the number of phonetic segments in the word as claimed in independent claims 13, 27 and 29. James, Bergstrom, Gupta '278, Gupta '095, Ueyama and Schwartz also each fail to teach or suggest biasing the transition probabilities in dependence on an estimated number of phonetic segments in the word as claimed in independent claims 13, 27 and 29 and are not cited as such.

Since Russell, James, Bergstrom, Gupta '278, Gupta '095, Ueyama and Schwartz each fail to teach or suggest the aforementioned features of independent claims 13, 27 and 29, any combination of the cited references also fails to teach or suggest the subject matter of independent claims 13, 27 and 29. Thus, the cited references, taken either individually or in combination, do not anticipate, or render independent claims 13, 27 and 29 obvious. Claims 15, 16, 19, 20, 22-24 and 30-32 depend either directly or indirectly from a corresponding one of

independent claims 13 and 29, and as such, include all the recitations of their corresponding independent claims. Dependent claims 15, 16, 19, 20, 22-24 and 30-32 are therefore patentably distinct from the cited references, individually or in combination, for at least the same reasons as given above for independent claims 13, 27 and 29.

Accordingly, for all the reasons stated above, Applicants respectfully submit that the rejections of claims 15, 16, 19, 20, 22-24 and 30-32 under 35 U.S.C. §103(a) are overcome.

**Newly Added Claims**

Applicants have added new claims 33-40 to more particularly define aspects of the present application. The new claims include no new matter and are fully supported by the specification and the drawings of the present application.

Accordingly, it is believed that the new claims are in condition for allowance.

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### **CONCLUSION**

In view of the amended claims and the remarks presented above, it is respectfully submitted that all of the claims are in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested in due course. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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